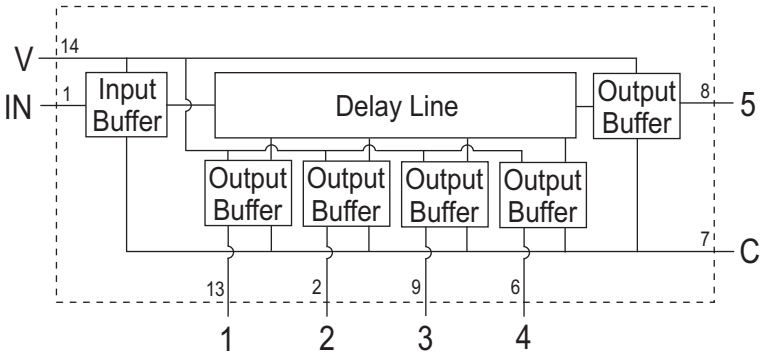
TTL Military Logic Delay Module (Low Profile)

The TTL Military Logic Delay Modules (Low Profile) manufactured by Engineered Components Company are designed to provide output waveforms that reproduce the input waveform after a set amount of delay time has elapsed. The five output waveforms are delay line taps provided at 20% increments of the total delay (20, 40, 60, 80, and 100%). These delay modules are non-inverting. The delay times are calibrated to the listed tolerances on the rising edge delays (see the Product Selection Table).

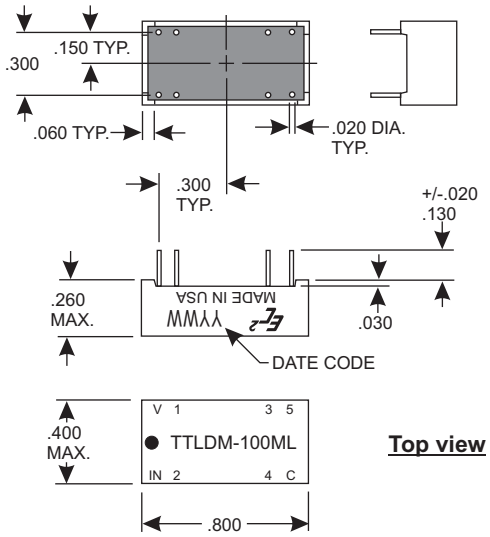
The MTBF on these modules, when calculated per MIL-HDBK-217, for a 50 deg.C ground fixed environment and with 50VDC applied, is in excess of 3 million hours. The temperature coefficient of delay is less than 500 ppm/deg.C over a temperature range of -55 to +100 deg. C. These modules are designed to operate over the full military temperature range of -55 to +125 deg. C.

The module is provided in a 14-pin DIP package, fully encapsulated in epoxy resin and is housed in a Diallyl Phthalate case, red in color. The case marking is applied by silkscreen using white epoxy paint. The 8 copper leads are tin-lead plated and meet the solderability requirements of MIL-STD-202, Method 208.

BLOCK DIAGRAM



MECHANICAL DIAGRAM



Top view

Product Selection Table

Part Number	Output Delay and Tolerances (in ns)				
	Tap 1 (20%)	Tap 2 (40%)	Tap 3 (60%)	Tap 4 (80%)	Tap 5 (100%)
TTLDM-25ML	5.0+/-1.0	10.0+/-1.0	15.0+/-1.0	20.0+/-1.0	25.0+/-1.0
TTLDM-30ML	6.0+/-1.0	12.0+/-1.0	18.0+/-1.0	24.0+/-1.0	30.0+/-1.5
TTLDM-35ML	7.0+/-1.0	14.0+/-1.0	21.0+/-1.0	28.0+/-1.5	35.0+/-1.5
TTLDM-40ML	8.0+/-1.0	16.0+/-1.0	24.0+/-1.0	32.0+/-1.5	40.0+/-2.0
TTLDM-45ML	9.0+/-1.0	18.0+/-1.0	27.0+/-1.5	36.0+/-1.5	45.0+/-2.0
TTLDM-50ML	10.0+/-1.0	20.0+/-1.0	30.0+/-1.5	40.0+/-2.0	50.0+/-2.0
TTLDM-75ML	15.0+/-1.0	30.0+/-1.5	45.0+/-2.0	60.0+/-2.0	75.0+/-2.5
TTLDM-100ML	20.0+/-1.0	40.0+/-1.5	60.0+/-2.0	80.0+/-3.0	100.0+/-3.0
TTLDM-125ML	25.0+/-1.0	50.0+/-2.0	75.0+/-2.5	100.0+/-3.0	125.0+/-4.0
TTLDM-150ML	30.0+/-1.5	60.0+/-2.0	90.0+/-3.0	120.0+/-4.0	150.0+/-5.0
TTLDM-175ML	35.0+/-1.5	70.0+/-2.5	105.0+/-4.0	140.0+/-4.5	175.0+/-5.0
TTLDM-200ML	40.0+/-1.5	80.0+/-3.0	120.0+/-4.0	160.0+/-5.0	200.0+/-6.0
TTLDM-225ML	45.0+/-2.0	90.0+/-3.0	135.0+/-4.0	180.0+/-6.0	225.0+/-7.0
TTLDM-250ML	50.0+/-2.0	100.0+/-3.0	150.0+/-5.0	200.0+/-6.0	250.0+/-8.0
TTLDM-300ML	60.0+/-1.5	120.0+/-2.0	180.0+/-3.0	240.0+/-4.0	300.0+/-5.0
TTLDM-350ML	70.0+/-1.5	140.0+/-2.5	210.0+/-4.0	280.0+/-4.5	350.0+/-5.0
TTLDM-400ML	80.0+/-1.5	160.0+/-3.0	240.0+/-4.0	320.0+/-5.0	400.0+/-6.0
TTLDM-450ML	90.0+/-2.0	180.0+/-3.0	270.0+/-4.0	360.0+/-6.0	450.0+/-7.0
TTLDM-500ML	100.0+/-2.0	200.0+/-3.0	300.0+/-5.0	400.0+/-6.0	500.0+/-8.0

Special modules can often be manufactured to provide for customer specific applications.

Operating Specifications:

All measurements made at 25 deg. C
All measurements made with Vcc = +5VDC
All measurements made with (1) TTL output load

Operating Temperature: -55 to +125 deg. C
Storage Temperature: -55 to +125 deg. C

Vcc Supply Voltage: 4.75 to 5.25VDC
Vcc Supply Current:
  Constant “0” in = 60mA typical
  Constant “1” in = 20mA typical
Logic “High” Input:
  Voltage: 2.0VDC min. ; Vcc max.
  Current: 2.4VDC = 50uA max. ; 5.5VDC = 1mA max.
Logic “Low” Input:
  Voltage: 0.8 VDC max.
  Current: -2.0mA max.
Logic “High” Voltage Out: 2.7VDC min.
Logic “Low” Voltage Out: 0.4VDC max.

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